

The opinion in support of the decision being entered today was *not* written for publication in and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* PAUL BALE, ROBERT DAVID PRESCOTT, PETER NILSSON,  
and ANDERS LINDQVIST

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Appeal No. 2006-3054  
Application No. 10/672,625  
Technology Center 3600

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HEARD: February 8, 2007

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Decided: March 22, 2007

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Before TERRY J. OWENS, MURRIEL E. CRAWFORD, and STUART S. LEVY,  
*Administrative Patent Judges.*

CRAWFORD, *Administrative Patent Judge.*

DECISION ON APPEAL  
STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. §134 from the examiner's final rejection of claims 1 to 20, which are all of the claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

Appellants invented a brake system for heavy vehicles.

An understanding of the subject matter on appeal can be gleaned from reading representative claims 1 and 2 which are reproduced below:

1. A brake system for a heavy vehicle, comprising:
  - a plurality of brake components;
  - at least one vehicle performance sensor;
  - a central control unit receiving sensor signals from said at least one vehicle performance sensor and generating central control signals for controlling said plurality of brake components based on the received sensor signals;
  - a distributed electronic control unit receiving sensor signals from said at least one vehicle performance sensor and generating local control signals for controlling only some of said plurality of brake components based on the received sensor signals; and
  - a conflict resolution scheme for resolving conflicts between the central control signals and the local control signals.
2. The brake system of Claim 1 wherein said central control unit comprises:
  - a first control scheme used by said central control unit for generating first central control signals;
  - a second control scheme used by said central control unit for generating second central control signals; and
  - a central control unit conflict resolution scheme used by said central control unit for resolving conflicts between the first and second central control signals.

The examiner has rejected claims 1 to 20 under 35 U.S.C. § 112, first paragraph for failing to comply with the enablement requirement. Specifically, the examiner contends that the appellants' specification does not enable a person or ordinary skill in the art to make or use a "control scheme" or a "conflict scheme."

The Appellants contend that a person of ordinary skill in the art would have been enabled by reading the specification to make and use the claimed control scheme and conflict scheme.

The examiner has rejected claims 1 to 20 under 35 U.S.C. § 102(b) as anticipated by Phoenix because the examiner finds that Phoenix discloses each and every element of claims 1 to 20.

The Appellants contend that Phoenix does not disclose a conflict resolution scheme as recited in claims 1 and 5. Appellants also contend that Phoenix does not disclose a manual input for overriding the central control signals and the local central control signals, as recited in claim 6, or electrical energy for use in actuating a brake component as recited in claim 8.

#### ISSUES

The first issue is whether the Appellants have shown that the examiner erred in holding that the specification would not have enabled a person of ordinary skill in the art to make and use a control scheme and a conflict resolution scheme.

The second issue is whether the Appellants have shown that the examiner erred in finding that Phoenix discloses a conflict resolution scheme.

The third issue is whether the Appellant has shown that the examiner erred in finding that Phoenix discloses a manual input for overriding the central control signals and local control signals.

The fifth issue is whether the Appellants have shown that the examiner erred in finding that Phoenix discloses electrical energy for use in actuating the brake component.

## FINDINGS OF FACT

Appellants' invention is a brake system for heavy vehicles that includes a central control unit which receives signals from a vehicle performance sensor and generates a central control signal for controlling a plurality of brake components based on the received sensor signal [0012]. A distributed electronic control receives sensor signals from a vehicle performance sensor and generates a local control signal for only some of the brake components based on the received sensor signal [0018]. In the invention of claim 1 there is also included a conflict resolution scheme for resolving conflicts between the central control signal and the local control signal [0010].

In the invention of claim 2, the central control unit includes a first control scheme to generate a first central control signal and a second control scheme to generate a second central control signal [0014]. There is also a central control unit conflict resolution scheme for resolving conflicts between the first and second central control schemes [0025].

A control scheme is defined by the specification as a plurality of rules concerning actuation of actuators in response to various sensor signals [0038]. The control schemes may relate to the brake system, emergency brake system, suspension system, anti-lock braking system, shock-absorbing system or safety system. For example, the specification describes a safety control scheme as one or more rules that direct safety requirements imposed by a government body allowing these mandated rules to be incorporated into the overall control scheme. It is well known to include control schemes in vehicle. For instance, it is well known to include an anti-lock braking control scheme with the rule that if wheel slippage is sensed, a pulsed control signal is generated for the brake actuators.

A conflict resolution scheme is defined by the specification as a scheme which resolve conflicts between two control schemes [0040]. The conflict resolution scheme has rules concerning how to resolve conflicts between control schemes. The specification discloses:

These conflict control rules may be absolute(e.g., “Safety scheme rules are always given priority over actuator control scheme rules.”), or may depend upon sensed conditions of the vehicle (e.g., “When condition A is sensed, the rule contained in actuator control scheme X is given priority over the rule contained in actuator control scheme Y”).[0040]

. . . conflict rules help resolve conflicts at the control level. With such a system, for example, inherent conflicts existing between antilock braking, traction, manual inputs/outputs, and other vehicle dynamics schemes no longer lead to “lost” or cycling braking systems creating a safety hazard [0041].

A person of ordinary skill in the art would be informed by this language of the specification how to make and use a conflict resolution scheme.

Phoenix discloses an electronic braking control system which includes, as depicted in Figure 1, a plurality of brake components 20, a vehicle performance sensor or wheel speed sensor 26, and a central control unit 10 (col. 5, line 54 to col. 6, lines 5). The central control unit 10 receives sensor signals from the sensors 26 and generates a control signal for controlling the brake components 20 (Figure 3). A distributed electronic control unit 16 also receives the sensor signals from the vehicle sensors 26 and controls some of the brake components 20. In operation, the central controller 10 controls the brake components by receiving signals from the sensors 26 through line 26 and through delay 44a. The central control unit 10

calculates the appropriate brake pressure in view of the driver demand and the wheel speed sensor 26 (col. 6, lines 33 to 35). ABS logic 40 in central control unit 10 contains rules for controlling the pressure in the brakes when a skid is detected. When the wheels skid, ABS logic 40 responds by reducing the demanded pressure  $P_a$  (pressure dump) transmitted to the local control 16 (col. 6, lines 11 to 19). Therefore, the rule of the ABS logic for operation of the brakes is: when a skid is detected, generate a signal for a pressure dump. However, the application of this ABS logic 40 is delayed by delays 44a and 44b which would result in the brake pressure response to the wheel skid being late. Therefore, Phoenix discloses:

Simple skid detection logic 46 within the valve controller 16 monitors the wheel speed  $S'$  and can generate a pressure dump signal  $P_d$  which will override for a limited period the brake pressure demand  $P_a$  communicated from the master controller 10 to a brake pressure control element 48 which supplies the pressure control signals  $P_c$  for the brake actuator 22 (not shown in Fig. 3) [col. 6, lines 53 to 59].

The rules for controlling the pressure in the brakes when a skid is detected for both the central controller 10 and the distributed controller 16 is to generate a signal for a pressure dump. As such, both the central controller 10 and the distributed controller 16 have the same control scheme in the event of a wheel skid. However, when a skid is detected the distributed controller 16 is capable of overriding the signal  $P_a$  coming from the central controller by its own signal  $P_d$  to compensate for delay as discussed above.

The system of Phoenix includes a brake pedal, release of pressure on which overrides the central control signal and the local control signal.

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Phoenix does not disclose a source of electrical power for use in actuating the brake component.

### PRINCIPLES OF LAW

An analysis of whether the claims under appeal are supported by an enabling disclosure requires a determination of whether that disclosure contained sufficient information regarding the subject matter of the appealed claims as to enable one skilled in the pertinent art to make and use the claimed invention. The test for enablement is whether one skilled in the art could make and use the claimed invention from the disclosure coupled with information known in the art without undue experimentation. See United States v. Teletronics, Inc., 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988), cert. denied, 109 S.Ct. 1954 (1989); In re Stephens, 529 F.2d 1343, 1345, 188 USPQ 659, 661 (CCPA 1976).

In order to make a rejection, the examiner has the initial burden to establish a reasonable basis to question the enablement provided for the claimed invention. See In re Wright, 999 F.2d 1557, 1561-62, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993) (examiner must provide a reasonable explanation as to why the scope of protection provided by a claim is not adequately enabled by the disclosure). A disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the enablement requirement of 35 U.S.C. § 112, first paragraph, unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support. Assuming that sufficient reason for such doubt exists, a rejection for failure to teach how to make and/or use

will be proper on that basis. See In re Marzocchi, 439 F.2d 220, 223, 169 USPQ 367, 369 (CCPA 1971). As stated by the court, "it is incumbent upon the Patent Office, whenever a rejection on this basis is made, to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement. Otherwise, there would be no need for the applicant to go to the trouble and expense of supporting his presumptively accurate disclosure." In re Marzocchi, 439 F.2d at 224, 169 USPQ at 370.

## ANALYSIS

### Enablement Issue

In our view, a person of ordinary skill in the art would know of various control schemes which are present in vehicles and would know how to make a control scheme without undue experimentation.

The specification discloses a conflict resolution scheme in a manner that would enable a person of ordinary skill in the art to make and use the invention without undue experimentation.

### Anticipation Issue

Phoenix discloses that when a skid occurs there may be a delay in the application of the skid control by central controller 10. This delay results in the signal Pa not being in accordance with the skid control scheme rules for some period of time. In Phoenix, there is also a distributed electronic control unit 16 which generates a signal Pd which is immediately in accordance with the skid



control skid. Phoenix teaches that when the central control signal Pa signal is in conflict with the Pd signal because of a delay, the conflict is resolved by the Pd signal overriding the Pa signal. As such, Phoenix does disclose the conflict resolution scheme recited in claim 1.

However, because the control schemes for the central control unit 10 and the distributed control unit 16 are the same there is no conflict resolution scheme that resolved conflicts between conflicting control schemes. As such, Phoenix does not disclose the conflict resolution scheme recited in claims 2 to 5, 7, and 10 to 20.

Phoenix does disclose the invention of claim 6, which is dependent on claim 1 by disclosing a brake pedal that is a manual override to the central control signal and the distributed electronic central signal. However, Phoenix does not disclose, as recited in claim 8, electrical energy for use in actuating the brake component.

### CONCLUSIONS OF LAW

The appellants have shown that the examiner erred in holding that appellants' specification failed to enable a person of ordinary skill in the art to make a brake system that includes control schemes and a conflict resolution scheme.

The appellants have failed to establish that the examiner erred in holding that Phoenix disclosed a conflict resolution scheme that resolves conflicts between the central control signals and local signals, as recited in claim 1. As appellants have not argued the separate patentability of claims 7 and therefore this claim stands or falls with claim 1 from which it depends.

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The appellants have shown that the examiner erred in finding that Phoenix discloses a conflict resolution scheme that resolves conflicts between conflicting control schemes and recited in claims 2 to 5, 10 to 20.

The appellants have not shown that the examiner erred in finding that Phoenix discloses a manual input to override the central control signal and the distributed local control signal.

The appellants have shown that the examiner erred in finding that Phoenix discloses an electrical energy for use in actuating the brake component.

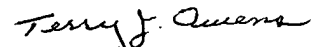
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ORDER


The examiner's rejection under 35 U.S.C. § 112, first paragraph of claims 1 to 20 is not sustained. The examiner's rejection of claims 1, 6 and 7, under 35 U.S.C. § 102(b) is sustained. The examiner's rejection of claims 2 to 5, and 7 to 20 under 35 U.S.C. § is not sustained.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

  
TERRY J. OWENS  
Administrative Patent Judge

  
MURRIEL E. CRAWFORD  
Administrative Patent Judge

  
STUART S. LEVY  
Administrative Patent Judge

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